

FILE COPY

BARNES & THORNBURG



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 1633

Attorney
Docket: 21419-91513

Applicant: Bosworth & Vögeli

Invention: *COMPOSITIONS TO IDENTIFY SWINE
GENETICALLY RESISTANT TO F18 E. COLI
ASSOCIATED DISEASES*

Serial No: 09/844,268

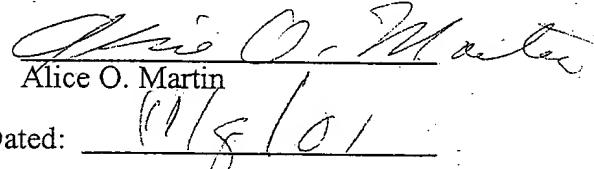
Filed: April 27, 2001

Examiner: N/A

Certificate Under 37 CFR 1.8(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231

on November 8, 2001


Alice O. Martin

Dated: 11/8/01

INFORMATION DISCLOSURE STATEMENT

JUN 30 2001

TECH CENTER 1600/2900

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

This statement is filed in the application identified above pursuant to 37 C.F.R. §

1.56. No representation is intended that a complete search has been made of relevant publications or that no more relevant publications than listed below are available. A copy of each publication is not provided pursuant to 37 C.F.R. 1.98(d) as they were previously submitted to the Office on February 22, 2001 for U.S. Ser. No. 09/443,766 and relied upon for this application. The filing of this Statement shall not be construed to be an admission that the information cited in the Statement is or is considered to be material to patentability as defined in § 1.56(b).

PUBLICATIONSU.S. PATENTS

<u>Patent No.</u>	<u>Issue Date</u>	<u>Inventor</u>
5,358,649	October 25, 1994	MacLennan, <i>et al.</i>
5,552,144	September 3, 1996	Samuel, <i>et al.</i>
5,625,124	April 29, 1997	Falk, <i>et al.</i>

FOREIGN PATENTS

<u>Publication No.</u>	<u>Publication Date</u>	<u>Country</u>
WO 86/04604	August 14, 1986	PCT (DENMARK)
WO 94/13811	June 23, 1994	PCT (EUROPE)
WO 96/28967	September 26, 1996	PCT (JAPAN)

Abstract: The hyperacute rejection occurring in the transplantation of tissues of a non-primatal mammal into a higher primate can be mitigated by transferring foreign genes of a higher primate, which express a sugar transferase, into a non-primatal mammal so as to express sugar-chain antigens of the higher primate.

OTHER REFERENCES

BOSWORTH, B.T., *et al.* (1996) "Vaccination With Genetically Modified Shiga-Like Toxin Iie Prevents Edema Disease in Swine." *Infect and Immun* 64(1): 55-60.

COHNEY, S., *et al.* (1996) "Molecular Cloning of the Gene Coding for Pig $\alpha 1 \rightarrow 2$ fucosyltransferase." *Immunogenet* 40: 76-79.

DEVEREUX, J., *et al.* (1984) "A Comprehensive Set of Sequence Analysis Programs for the VAX." *Nucl Acids Res* 12(1): 387-395.

FUJIL, J., *et al.* (1991) "Identification of a Mutation in Porcine Ryanodine Receptor Associated with Malignant Hyperthermia." *Science* 253: 448-451.

GAFFNEY, R.A., *et al.* (1994) "Effect of Lewis Blood Group Antigen Expression on Bacterial Adherence to COS-1 Cells." *Infect and Immun* 62(7): 3022-3026.

INFORMATION DISCLOSURE STATEMENT (October 27, 1998)

KELLY, R.J., *et al.* (1994) "Molecular Basis for H Blood Group Deficiency in Bombay (O_h) and Para-Bombay Individuals." *Proc Natl Acad Sci* 91: 5843-5847.

MEIJERINK, E., *et al.* (1997) "Two α (1,2) fucosyltransferase Genes on Porcine Chromosome 6q11 are Closely Linked to the Blood Group Inhibitor (S) and *Escherichia coli* F18 Receptor (ECF18R) Loci." *Mammal Genome* 8: 736-741.

NAGY, B., *et al.* (1992) "Susceptibility of Porcine Intestine to Pilus-Mediated Adhesion by Some Isolates of Piliated Enterotoxigenic *Escherichia coli* Increases with Age." *Infect and Immun* 60(4): 1285-1294.

VÖGELI, P., *et al.* (1996) "Genes Specifying Receptors for F18 Fimbriated *Escherichia coli*, Causing Oedema Disease and Postweaning Diarrhoea in Pigs, Map to Chromosome 6." *Schweiz Arch Tierheilk* 139(11): 479-484.

VÖGELI, P., *et al.* (1997) "Ein Molekular Test für den Nachweis des *E.-coli*-F18-Rezeptors: ein Durchbruch im Kampf gegen Ödemkrankheit und Absetzdurchfall beim Schwein." *Schweiz Arch Tierheilk* 139(11): 479-484.

Abstract: Oedema disease and post-weaning diarrhoea in swine are associated with the colonization of the intestine with toxigenic *Escherichia (E.) Coli* bacteria of various serotypes. Colonization depends on specific binding between adhesive fimbriae and receptors on the enterocytes. The demonstration of these receptors allows the identification of susceptible and resistant pigs. Direct sequencing of the α (1,2) fucosyltransferase gene (FUT1) in swine being either susceptible or resistant to adhesion by F18 fimbriated *E. coli* revealed a mutation at basepair 307 (M307). Analysis of the mutation in Swiss Landrace and Large White families showed close linkage with the locus controlling resistance and susceptibility to *E. coli* F18 adhesion (ECF 18R). The FUT1(M307) mutation is a good marker for selection of *E. coli* of F18 adhesion resistant animals. The mutation is found with variable frequencies in Duroc, Hampshire and Pietrain pigs as well.

None of the above-cited publications are believed to disclose or suggest the invention recited in the claims of the above-identified application or the priority date of the application is before the publication date. It is therefore believed that the claimed invention is patentably distinguishable over these publications.

Please charge any fees that might be due in connection with this Information Disclosure Statement to our Deposit Account No. 10-0435.

Respectfully submitted,

BARNES & THORNBURG



Alice O. Martin

Alice O. Martin
Attorney Registration No. 35,601

BARNES & THORNBURG
2600 Chase Plaza
10 South LaSalle Street
Chicago, Illinois 60603
(312) 357-1313
November 8, 2001

<p style="text-align: center;">U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE</p> <p style="text-align: center;">INFORMATION DISCLOSURE STATEMENT</p> <p style="text-align: center;">JUN 22 2004</p> <p style="text-align: center;">PATENT & TRADEMARK OFFICE</p>		ATTY. DOCKET NO. 21419-91513		SERIAL No. 09/844,268
		APPLICANTS Bosworth & Vögeli		
		FILING DATE April 27, 2001		GROUP

U.S. PATENT DOCUMENTS							
*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
	AA	5,358,649	Oct. 25, 1994	MacLennan, et al.	435	6	Dec. 20, 1991
	AB	5,552,144	Sep. 3, 1996	Samuel, et al.	424	236.1	Jan. 10, 1994
	AC	5,625,124	Apr. 29, 1997	Falk, et al.	800	2	Jul. 11, 1994
	AD						
	AE						JUN 30 2004
	AF						
	AG						
	AH						TECH CENTER 1600/2900
	AI						
	AJ						
	AK						

FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Subclass	Translation Yes No
	AL	WO 86/04604	Aug. 14, 1986	PCT(DENMARK)			X
	AM	WO 94/13811	Jun. 23, 1994	PCT(EUROPE)			X
	AN	WO 96/28967	Sep. 26, 1996	PCT(JAPAN)			X
	AO						
	AP						

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

AR	BOSWORTH, B.T., et al. (1996) "Vaccination With Genetically Modified Shiga-Like Toxin Iie Prevents Edema Disease in Swine." <i>Infect and Immun</i> 64(1): 55-60.
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AT	DEVEREUX, J., et al. (1984) "A Comprehensive Set of Sequence Analysis Programs for the VAX." <i>Nucl Acids Res</i> 12(1): 387-395.
AU	FUJIL, J., et al. (1991) "Identification of a Mutation in Porcine Ryanodine Receptor Associated with Malignant Hyperthermia." <i>Science</i> 253: 448-451.
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AX	KELLY, R.J., et al. (1994) "Molecular Basis for H Blood Group Deficiency in Bombay (O_h) and Para-Bombay Individuals." <i>Proc Natl Acad Sci</i> 91: 5843-5847.
AY	MEIJERINK, E., et al. (1997) "Two $\alpha(1,2)$ fucosyltransferase Genes on Porcine Chromosome 6q11 are Closely Linked to the Blood Group Inhibitor (S) and <i>Escherichia coli</i> F18 Receptor (ECF18R) Loci." <i>Mammal Genome</i> 8: 736-741.
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BB	VÖGELI, P., et al. (1997) "Ein Molekular Test für den Nachweis des <i>E. coli</i> -F18-Rezeptors: ein Durchbruch im Kampf gegen Oedemkrankheit und Absetzdurchfall beim Schwein." <i>Schweiz Arch Tierheilk</i> 139(11): 479-484.

Examiner		Date Considered
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609.

Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



30 2004

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Appl. Invent: Brad Bosworth and Peter Vogeli
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Title: COMPOSITIONS TO IDENTIFY SWINE
GENETICALLY RESISTANT TO F18 *E. COLI*
ASSOCIATED DISEASES

The following was sent to United States Patent and
Trademark Office:

Information Disclosure Statement

Mailed via Regular Mail on November 8, 2001.


Alice O. Martin
Reg. No. 35,601

